CLAIMS

1. A method of designing a foundation element, wherein the foundation element comprises a volume of concrete and a volume of ground material, the method comprising the steps of:

i) determining the total load bearing capacity required by the foundation element;

ii) determining the parameters of the foundation element by consideration of the contribution of the volume of ground material to the overall load bearing capacity of the foundation element.

2. A method of analysing the load bearing capacity of a foundation element, wherein the foundation element comprises a volume of concrete and a volume of ground material, the method comprising the steps of:

i) determining the volume and strength of the concrete; and

ii) determining the volume and strength of ground material which contributes to the overall bearing capacity of the foundation element.

3. A method as claimed in claim 1 or 2, comprising the step of determining the contribution of skin friction between the volume of ground material and the surrounding ground material.

4. A method as claimed in any preceding claim, comprising the step of determining the mean shear strength of the volume of concrete.

5. A method as claimed in any preceding claim, wherein the volume of concrete comprises a ribbed foundation element.

6. A method as claimed in claim 5, wherein the volume of concrete comprises a ribbed cylindrical pile.

7. A method as claimed in claim 6, wherein the volume of concrete comprises a ribbed diaphragm wall.

8. A method as claimed in any one of claims 1 to 4, wherein the foundation element comprises a plurality of discrete concrete sections which are separated by the volume of ground material.

9. A method as claimed in claim 8, wherein the discrete concrete sections comprise cylindrical piles.

10. A method as claimed in claim 9, wherein the spacing between the piles is less than 3 times the diameter of the individual piles.

11. A method as claimed in any preceding claim, wherein consideration is further given to the radius of the curved failure plane adjoining discrete concrete sections within the element or between adjacent concrete ribs.

12. A method of constructing a composite foundation element in accordance with the method set out in any one of claims 1 to 11.

13. A composite foundation element, comprising a volume of concrete and a volume of ground material, wherein the parameters of the foundation element have been determined by consideration of the contribution of the volume of ground material to the overall load bearing capacity of the foundation element.

14. A composite foundation element as claimed in claim

13, wherein the volume of concrete comprises a ribbed section having a plurality of peripheral concrete sections, wherein the volume of ground material exists between the peripheral concrete sections.

15. A composite foundation element as claimed in claim 14, wherein the volume of concrete comprises a ribbed pile having a cylindrical section.

16. A composite foundation element as claimed in claim 14, wherein the volume of concrete comprises a ribbed diaphragm wall.

17. A composite foundation element as claimed in claim 13, wherein the foundation element comprises a plurality of discrete concrete sections which are separated by the volume of ground material.

18. A composite foundation element as claimed in claim 17, wherein the discrete concrete sections comprise cylindrical piles.

19. A composite foundation element as claimed in claim 17 or 18, wherein the spacing between the discrete concrete sections is less than 3 times the diameter of the individual sections.

20. A method as substantially hereinbefore described with reference to, and as illustrate in, the accompanying drawings.

21. A composite foundation element substantially as herein before described with reference to, and as illustrated in, the accompanying drawings.